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## Two New Species of Typhlocybine Leafhoppers From North America (Homoptera, Cicadellidae)

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WHILE working on the species of the genus *Empoa* in preparation of a revision of the North American species of *Typhlocyba* and its allies (Christian, 1953), the author saw several specimens with a broad median band and a few spots of brown color along the cross-veins, which appeared to be a new species. Because the number of specimens was small it was decided that the description of this species should be delayed until a good series was at hand. Since then a long series of specimens of this species, collected from red oak (*Quercus rubra* L.) by D. F. Bray (Bray and Triplehorn, 1953) has been seen. This series is of particular value since it was collected over a period of time from June 4 to August 21 and contains specimens of both sexes showing all degrees of intensity of coloration through two generations.

*Empoa rubricola* sp. n.

*Diagnosis.* Resembling *Empoa casta* (McAtee) in having a brown transverse median band of color and a series of brown spots along the cross-veins, but lacking brown pigment on the scutellum; also resembling *Empoa caryata* Christian but easily distinguished from both of these by the greater width of the median band of color.

*Length.* 3.25 mm. to 3.5 mm.

*Color.* Head, pronotum, and scutellum light yellow to whitish yellow, yellow orange on deeply pigmented specimens. Fore wings light yellow with dark brown transverse median band one half as broad as width of wing, with traces of dark brown spots in apices of second and third basal cells along cross-veins, and in bases of first, second, and fourth apical cells along cross-veins; all of third apical cell darkly fumose, spots in apical group reduced or absent on some mature specimens; ground color of wing deep yellow to yellowish white, areas anterior to cross veins basad of dark spots whitish hyaline. Abdomen light yellow with terga of segments underlying median band also brown.

*Male genitalia.* As in other species of the Casta Group of *Empoa*.

*Types.* HOLOTYPE: male (346\*) from red oak, Wilmington, Delaware, Aug. 14, 1951; coll. Dale F. Bray. ALLOTYPE: female (425) from red oak, Wilmington, Delaware, Aug. 21, 1951; coll. Dale F. Bray. Both holotype and allotype in the Snow Entomological Collections of the University of Kansas.

PARATYPES: FROM Wilmington, Delaware; coll. D. F. Bray; from red oak unless otherwise indicated; in the Snow Entomological Collections, University of Kansas. Males: 74\*, 84, June 4, 1951; 107, June 12, 1951; 131, June 20, 1951; 362, 367, Aug. 8, 1951; 399, Aug. 14, 1951; 419, 427, 428, Aug. 21, 1951. Females: 116, June 12, 1951; 135, 142, 144, June 20, 1951; 157, 167, June 26, 1951; 331, 332, 333, July 31, 1951; 253 (pin oak), July 16, 1951; 365, 369, Aug. 8, 1951; 388, Aug. 14, 1951; 418, 426, Aug. 21, 1951. One lacking abdomen: 145, June 20, 1951. From Broekville, Ontario; Coll. W. Metcalf; from *Quercus* sp.; in the Colorado Agricultural and Mechanical College Collection, Fort Collins, Colorado. Five males, one female: Aug. 12, 1903.

From Milwaukee, Wisconsin; coll. P. J. Christian; in the University of Louisville Collection. One female: Aug. 26, 1952.

The author has also received a series of specimens of a species of the genus *Edwardsiana* which differs from all previously described species. Although this new species resembles *E. euphrante* (McAtee), to which it keys in the above mentioned revision, it may be distinguished from *E. euphrante* by certain characteristics set forth below.

*Edwardsiana alcorni* sp. n.

*Diagnosis.* Resembling *Edwardsiana euphrante* (McAtee) in body color, in shape of aedeagus, and in general contour of posterior mar-

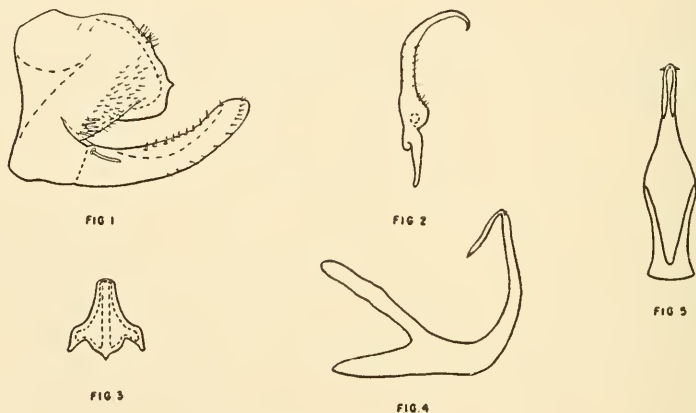
\* Numbers refer to the collector's field records.

gin of pygofer but differing in having lateral apical processes of aedeagus greatly reduced, appearing thornlike, and in having ventral posterior angle of pygofer roundly produced ventrally.

*Length.* Male 3.75 mm. Female 4.0 mm.

*Color.* Head, pronotum, scutellum pale yellowish white. Fore wings whitish hyaline, apical cells and areas anterior to cross veins in inner three basal cells slightly funose. Abdomen yellowish white.

*Genital capsule.* Male pygofer, in lateral aspect, with posterior margin slightly slanting ventrocaudad; dorsal angle slightly produced; ventral angle strongly rounded with a small distinct apically-rounded caudally-directed hook; male plate as in other species of the genus. (Fig. 1.)



*Edwardsiana alcorni*

FIG. 1. Left side of male pygofer, lateral aspect. FIG. 2. Right style, ventrolateral aspect. FIG. 3. Connective, ventral aspect. FIG. 4. Aedeagus, left lateral aspect. FIG. 5. Aedeagus, anterior aspect.

*Internal male genitalia.* Aedeagus with shaft slightly tapering to apex, with two pairs of unbranched apical processes; the lateral pair directed laterad, greatly reduced to thornlike projections visible only under 16 mm. objective of microscope or greater magnification; median pair nearly straight, parallel, directed ventrocaudad toward the base of aedeagal apodeme, one-fourth as long as vertical portion of aedeagal shaft. (Figs. 4 and 5.) Connective and styles without distinctive features. (Figs. 2 and 3.)

*Types.* HOLOTYPE: male; ALLOTYPE: female; PARATYPES: six males and four females. All from Dazadeash Lake, Yukon Territory, July 31, 1951; coll. J. R. Alcorn; in the Snow Entomological Collections of the University of Kansas.

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